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Purulent Absorption Considered as a Cause of Insanity.

BY

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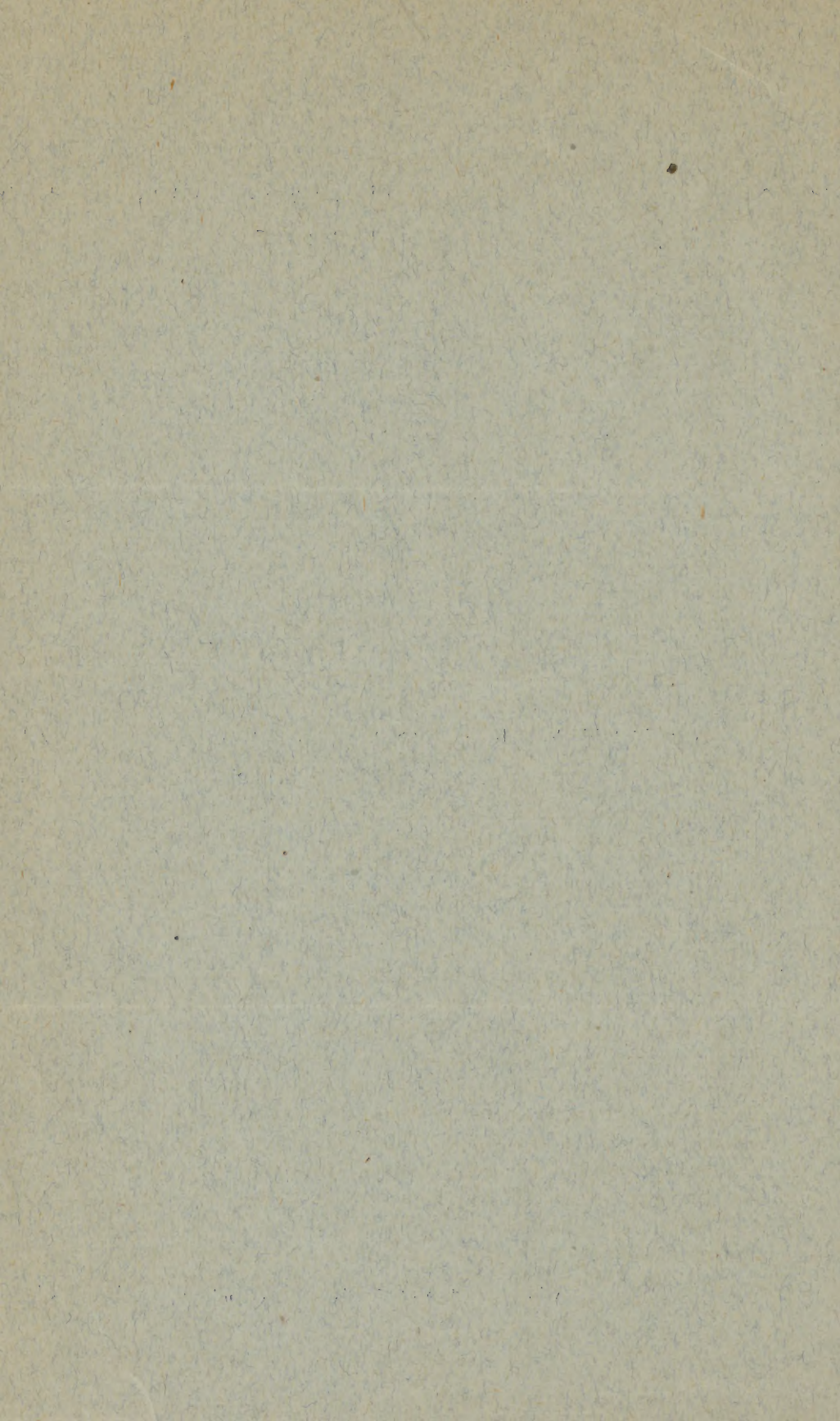
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PURULENT ABSORPTION CONSIDERED AS A CAUSE OF INSANITY.

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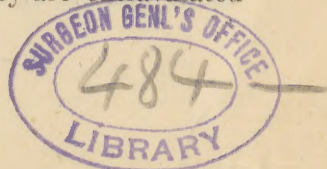
By purulent absorption as a cause of insanity I would indicate those mental states or psychoses which are excited by pus being absorbed by veins or lymphatics and conveyed to the brain or ganglia of the sympathetic system, whereby the brain cells are so affected as to act abnormally, or the cells of the sympathetic ganglia or vaso-motor system diminish the blood supply.

I have seen several cases of mental aberration, either transitory or permanent, which I am convinced had their origin in purulent absorption. Doubtless there has been some literature on the subject from the pens of alienists, but thus far I have failed to find it except by mere reference among toxic insanities.

I do not use the word "phlebitis," because phlebitis would imply insanities produced by inflammation of the coat of the veins. It is true that pus may be absorbed by an inflamed vein, but when it is absorbed the veins are not usually inflamed; neither are the veins the only channels by which the pus enters the system. The absorbents may and do, perhaps, take a more active part in conveying pus to the vital organs than the veins.

Pus when mixed with blood coagulates that fluid by a vital, not chemical, action. When the vital forces retain their power the blood coagulates at once in the vein producing adhesive phlebitis, and the wound in the vessel is sealed by a firm coagulum while the healing process is going on; but if the vital power of the blood is diminished by disease, then this conservative coagulating action does not take place in time to plug the vessel and stop the poison on the threshold.

The barrier which nature in a state of health erects to prevent the flow of pus into the veins, is not set up and the poisonous fluid is carried onward in the current of the circulation. The absorbed pus globules once admitted into the current of the blood, flow freely through the large systemic veins until they reach the capillary system of the lungs; the lung capillaries being smaller than the pus globules, they (the globules) find lodgment and accumulate until the pulmonic capillaries no longer bearing the pressure from behind give way and they are extravasated



into the parenchyma of the lungs, hence the coughing, etc. The same mechanical conditions exist in the minute capillaries of the brain.

It is a recognized fact that the injection of pus into the veins of the higher vertebrate mammals renders them "mad," and the degree of madness varies with the amount of pus injected, and I might remark here that in an observation of over thirty years, I have not known a case of tetanus, or canine madness, in the human or other subjects when there had not been a wound in which suppuration—even a very small amount—had not preceded the attack.

Pus is migratory without doubt; we see its metastatic power evinced by bubo in the groin from injury of the head of the penis, or suppuration in an ovary from a disease of the uterus, a blow upon the head producing abscess in the brain, soon to be followed by metastasis to the liver. The ancient medical writers gave us but few forms of mental trouble, the most common being what they called "melancholy madness," which, from the days of Hippocrates was attributed to disease of the liver, and our modern pathologists have failed to show any brain lesion further than a slight diminution in the caliber of the meningeal capillaries by the thickening of the lumen. I deem it probable, but not demonstrated, that the pus from the liver, or other remote parts, had to a greater or less extent traversed these vessels causing local or general anemia, followed by the sense of gloom and depression so well known to alienists.

I can safely say that in post-mortems of such cases I have invariably found pus either in the liver, mesenteric glands, or ulceration of the rectum, and I have rarely treated a case of melancholia in which there were not evidences of fistula in ano, rectal ulceration or hepatic abscess; in three post-mortems there were many small abscesses, or pus deposits, at the base of the brain and in the ventricles.

Purulent absorption evidently affects the brain slowly, the phenomenon is rarely accompanied by any elevation of temperature, the pulse usually but little accelerated except when the patient refuses food and the blood becomes poor in quality and much lessened in quantity; the urine is scanty, the conjunctivæ yellowish and the whole skin becomes a bronzed tint and is slightly shrunken. The type of insanity is not always that of melancholy, it may be a mild form of delusional insanity in which the patient thinks he is not at home, talks slowly and quietly about matters of little importance and without much connec-

tion; there is rarely any excitement; the patient may walk slowly about or stand gazing at one spot, or some object for a long time, occasionally talking incoherently. Death is usually due to exhaustion.

The cases of insanity which I have believed to be produced by purulent absorption, had as an exciting cause traumatism, ulcers, rheumatism or puerperal conditions.

Not to be tedious, I will give a single example of each: Mr. H. got off a street car, twisting his ankle. Experienced some little pain and fullness in the calf of the leg; continued work two days; leg began to get hard and enlarged clear up to the groin; little or no fever or pain; no feeling of cord-like hardness in the superficial veins. In a week or two the other leg went through the same changes, while the first recovered normal size. The legs getting better in four weeks' time, the patient began coughing; spit frothy matter slightly tinted with blood; no fever, or but little; no consolidation of lung. In eight weeks begins to talk incoherently, continues so until death two weeks after. This case shows that in the stepping from the car one of the deeper veins was either ruptured or injured to the degree that adhesive inflammation first took place, afterward formation of pus, phlebitis extending up to the saphena vein, then the characteristic metastases to opposite side, then up to liver, lungs and brain.

The case of Mr. A., an old soldier. Was injured in the nose, producing some necrosis of the lower turbinated bones. For a long time this gave little trouble except the disagreeable odor of ozæna, but finally he manifested a mild form of delusional insanity, which continued several years, only ending in the destruction of the cribriform plate and an exit of pus, which in a few months, culminated in recovery. Undoubtedly those veins of the nose which pass into the cranial cavity carried the pus to cerebral vessels as well as the lymphatics, which in this part of the body are peculiarly large and numerous.

I could give many instances of this form of insanity where blows have been received upon the head, where the scalp was not injured, neither was the skull fractured. It is not to be wondered at when we consider the free circulation that goes on through the veins of the scalp to the venous sinuses within the dura, and from branches of the arteries which pass from without to within the skull. The very fact that the scalp is not broken causes the injury to be more dangerous, because there is no escape from the pus, which must be taken up by lymphatics or veins.

A woman whose foot had been frozen to the degree that for years a large ulcer had existed upon the great toe, gradually became insane, with all the symptoms of pus absorption: a redness and tenderness along the lymphatics, a drying up of the original ulcer, an abscess of the groin, general failure of health, a cough and final death; no fever of consequence at any time. Post-mortem showed pus in small quantities in ventricles and in little pockets under the arachnoid, generally distributed.

Mr. V., a druggist, had inflammatory rheumatism six weeks; pneumonic sputa streaked with blood seventh week; no fever; eighth week delusional insanity; twelfth week died. Post-mortem showed pus enough to make the ventricular fluid grayish opaque in color, with same appearance in sub-arachnoidean fluid.

A gentleman of this city, age 47, weighing two hundred pounds, of splendid constitution and clean heredity, while hunting on his farm, attempted to get over a high rail fence; while just astride the top rail it broke, giving him a rather severe blow in the perineal region. The following day there was stiffness of the limbs, swelling of the lymphatic glands of the groin, and general depression. He was treated for malaria by many doctors of various methods, but was able to be about most of the time. He had slight chilly sensations, but no high temperature. At the end of six months he was anemic, the mesenteric glands enlarged, mental disturbances manifest, which continued until death, a year or more after the injury. A post-mortem showed every lymphatic gland of the brain, heart, lungs, liver, spleen, pancreas and omentum to be enlarged and containing pus.

Puerperal insanity has been held by most of the Continental specialists to arise from septic poisoning. There is no doubt but pus is in this case small in quantity, and that it is eliminated mostly by the kidneys.

This paper is not intended to discuss what pus is composed of or just how it is absorbed. It produces the effects described by getting there, probably by one of two ways: (1) Circulating directly through blood or lymphatic vessels; (2) by chemical poison evolved from pus. It is a fact that large abscesses are frequently found within the brain substance without doing injury to the mind or body, but pus never enters the cerebral circulation without affecting both.

